REMARKS

Claims 1, 4-6, 13-15 and 18-20 are pending.

Claims 1, 5, and 6 have been amended by incorporating the limitation that the additives are a friction modifier and at least two of a sulfur-free metal detergent (B), sulfur-free phosphorus compound (C), and a sulfur-free ashless antioxidant (D). The support for a sulfur-free ashless antioxidant (D) is found in original claim 2, and for its content at page 23, lines 8-10, of the specification. The support for "at least two" is found in Examples 5-1 to 5-5 showing superior results in Performance tests {Table 6) in contrast to other Examples wherein only one of (B), (C), and (D) is used.

The friction modifier has further been limited to one comprising glycerin monooleate. The support for this amendment is found at page 36, lines 22-25, of the specification.

The content of the friction modifier has been limited to 0.5 to 1.4 mass%. The support for this amendment is found at page 52, lines 22-26, of the specification.

The upper limit of the content of (B) has been limited to 0.2 mass%. The support for this amendment is found at page 15, lines 23-27, of the specification.

Claims 1-2, 4-7 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al., JP Publication No. 2000-297373 (Miyake) in view of Yagishita et al., US Patent Application Publication No. 2002/0142922 (Yagishita).

Miyake discloses a lubricant and a system having a pair of DLC contacting faces which is suitably used in lubricating oils. However, as the Examiner recognizes, Miyake does not explicitly disclose the claimed base oil (X), the sulfur content of the lubricant, or the additives present in the lubricant.

Yagishita discloses a lubricating oil composition for an internal combustion engine containing a base oil that overlaps the base oil (X) of the present invention, calcium salicylate as a sulfur-free metal detergent (B), zinc dialkylphosphate as a sulfur-free phosphorus compound (C), and a sulfur-free ashless anti-oxidant (D). Yagishita further discloses that the lubricant oil composition contains a friction modifier including long-chain fatty acid esters, but does not explicitly disclose glycerin monooleate.

Based on the above, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to use the base oil and additives of Yagishita in the composition of Miyake in order to enhance the high-temperature detergency and fuel efficiency of the lubricant composition.

In particular, the Examiner argues that one of ordinary skill in the art would immediately envisage glycerin monooleate from the disclosure of Yagishita and that glycerin monooleate would be obvious to try as friction modifier in the composition.

However, Yagishita does not describe any reason to select glycerin monooleate from a vast variety of long-chain fatty acid esters, nor does it suggest the superior result obtained therefrom.

In order to demonstrate a superior result of using glycerin monooleate, results of an experiment are submitted herewith by way of a Declaration, wherein sorbitan monooleate, which is another of long-chain fatty acid esters, is used in place of glycerin monooleate of the present invention. The result of the experiment is shown in comparison to Examples 5-1 to 5-5 of the present application. The results shown in the Table demonstrate that glycerin monooleate of the present invention provides a superior result in an SRV friction test compared to sorbitan monooleate of the prior art.

Therefore, even if one of ordinary skill in the art could apply the base oil and additives of Yagishita in the composition of Miyake, he could not achieve the present invention based on

these disclosures, since the present invention provides excellent friction reducing effect over the cited references.

Incidentally, Yagishita teaches in paragraph [0128] to use glycerin monooleate as a rust inhibitor. However, the amount of glycerin monooleate used as a rust inhibitor in Inventive Example 22 of Yagishita is 0.1 mass% of the lubricant composition, which is outside the claimed range of 0.5 to 1.4 mass% of the present invention. Glycerin monooleate at 0.1 mass% cannot provide sufficient function as a friction modifier. Thus use of glycerin monooleate as a friction modifier is not suggested by this reference.

Further, in the Response to Arguments in the Office Action, the Examiner argues that Examples 5-1 and 5-5 of the present application do not demonstrate the best results across all time limits amongst the example oils, and the examples from Table 6 include examples wherein no phosphorus compound is present and yet the examples yield the same results as those example oils with a phosphorus compound, so that this can hardly be shown to demonstrate unexpected results.

In response, the Applicant emphasizes that the amendment made herein renders Examples 5-1 to 5-5 as working examples, of which superior results over Comparative Examples and prior art are demonstrated.

Therefore, the present invention would not have been obvious over Miyake in view of Yagishita.